



(21) (A1) **2,298,847**  
(22) 2000/02/28  
(43) 2000/05/13

- (72) BEAUJEAN, HANS-JOSEF, DE  
(72) HAERER, JUERGEN, DE  
(72) NITSCH, CHRISTIAN, DE  
(72) HOLDERBAUM, THOMAS, DE  
(72) RICHTER, BERND, DE  
(72) GASSENMEIER, THOMAS OTTO, DE  
(71) HENKEL KOMMANDITGESELLSCHAFT AUF AKTIEN, DE  
(51) Int.Cl.<sup>7</sup> C11D 17/02, C11D 1/722, C11D 1/72, C11D 3/386, C11D 3/395,  
C11D 3/39  
(54) **DETERSIF POUR LAVE-VAISSELLE SOUS FORME SOLIDE  
CONTENANT DES AGENTS POUR ACTIVER LE  
BLANCHIMENT**  
(54) **DISHWASHER DETERGENT SHAPED BODIES CONTAINING  
BLEACH ACTIVATORS**

(57) The invention relates to shaped bodies containing builders, alkali sources, bleaching agents, enzymes and surfactants. Particularly high-performance deterative shaped bodies with high stability in storage, a good perfume profile and a deigned solubility profile are obtained if more than 80% by weight of the total content of an active substance (I) containing a constituent from the group of bleach activators is present in a region which makes up no more than 40% by volume of the shaped body.

THIS PAGE BLANK (USPTO)

**Abstract**

The invention relates to shaped bodies containing builders, alkali sources, bleaching agents, enzymes and surfactants. Particularly high-performance detergent shaped bodies with high stability in storage, a good perfume profile and a defined solubility profile are obtained if more than 80% by weight of the total content of an active substance (I) containing a constituent from the group of bleach activators is present in a region which makes up no more than 40% by volume of the shaped body.

**CLAIMS**

1. A shaped body containing builders, alkali sources, bleaching agents, enzymes and surfactants, characterized in that more than 80% by weight of an active substance (I) containing a constituent from the group of bleach  
5 activators is present in a region of no greater than 40% by volume.
2. A shaped body as claimed in claim 1, characterized in that a region of 1 to 30% by volume, preferably between 2 and 25% by volume and more preferably between 3 and 20% by volume of the shaped body contains more than 90% by weight, preferably more than 95% by weight and more  
10 preferably 100% by weight of an ingredient (I) present.
3. A shaped body as claimed in claim 1, characterized in that the ingredient (I) is a mixture of bleach activator and/or bleaching agent from the group of chlorine and/or oxygen bleaching agents and/or silver protector and/or enzyme and/or soil-release compound and/or a com-  
15 ponent for controlling solubility and/or other ingredients.
4. A shaped body as claimed in any of the preceding claims, characterized in that at least one oxygen bleaching agent selected from the group of alkali metal perborates, alkali metal percarbonates, organic peracids and hydrogen peroxide is present.
- 20 5. A shaped body as claimed in any of the preceding claims, characterized in that the ingredient (I) contains at least one bleach activator compound and at least one fusible component for controlling solubility selected from the group of surfactants, paraffins, microwaxes and/or relatively high molecular weight polyethylene glycols.
- 25 6. A shaped body as claimed in any of the preceding claims, characterized in that a bleach activator, preferably from the group of polyacylated alkylenediamines, more particularly tetraacetyl ethylene-diamine (TAED), N-acyl imides, more particularly N-nonanoyl succinimide (NOSI), acylated phenol sulfonates, more particularly n-nonanoyl or  
30 isononanoyloxybenzenesulfonate (n- or iso-NOBS), n-methyl morpholinium acetonitrile methyl sulfate (MMA) and/or the group of manganese and/or

cobalt salts and/or complexes, more preferably the cobalt (ammine) complexes, cobalt (acetate) complexes, cobalt (carbonyl) complexes, chlorides of cobalt or manganese and/or manganese sulfate, is present, preferably in quantities of 1% by weight to 10% by weight and more  
5 preferably in quantities of 2% by weight to 8% by weight, based on the composition as a whole.

7. A shaped body as claimed in any of the preceding claims, characterized in that one or more builders from the group of gluconates, low molecular weight polycarboxylic acids and salts thereof,  
10 homopolymeric and copolymeric polycarboxylic acids and salts thereof, carbonates, phosphates and silicates, preferably trisodium citrate and/or pentasodium tripolyphosphate and/or sodium carbonate and/or sodium bicarbonate and/or gluconates and/or silicate builders from the class of disilicates and/or metasilicates is/are also used.

15 8. A shaped body as claimed in any of the preceding claims, characterized in that it contains a mixture of tripolyphosphate and sodium carbonate as builder system.

9. A shaped body as claimed in any of the preceding claims, characterized in that it contains a mixture of tripolyphosphate and sodium  
20 carbonate and sodium disilicate as builder system.

10. A shaped body as claimed in any of the preceding claims, characterized in that the surfactants are selected from the group of nonionic surfactants, preferably low-foaming nonionic surfactants, more preferably alkoxylated and/or propoxylated fatty alcohols, alkyl  
25 polyglycosides, alkyl polyglucamides and/or mixtures of the surfactants mentioned.

11. A shaped body as claimed in any of the preceding claims, characterized in that at least one silver protector selected from the group of triazoles, benzotriazoles, bis-benzotriazoles, aminotriazoles, alkylaminotri-  
30 azoles and transition metal salts or complexes is additionally present.

12. A shaped body as claimed in claim 11, characterized in that

benzotriazole and/or alkyl aminotriazole is/are present as silver protector(s).

13. A shaped body as claimed in claim 11, characterized in that the transition metal salts are selected from the group of manganese and/or  
5 cobalt salts and/or complexes, preferably cobalt (ammine) complexes, cobalt (acetate) complexes, cobalt (carbonyl) complexes, chlorides of cobalt or manganese and manganese sulfate.

14. A shaped body as claimed in any of the preceding claims, characterized in that the component and/or components for controlling  
10 solubility are selected from the group of paraffins, microwaxes and high molecular weight polyethylene glycols.

15. A shaped body as claimed in claim 14, characterized in that the dissolving time of the shaped body as a whole is longer than the duration of the prerinse cycle of a conventional dishwashing machine.

15 16. A shaped body as claimed in any of claims 1 to 13, characterized in that the component and/or components for controlling solubility are selected from the group of organic acids, for example citric acid, or a citric acid/bicarbonate mixture and/or celluloses and cellulose derivatives.

17. A shaped body as claimed in claim 16, characterized in that the  
20 dissolving time of the shaped body as a whole is shorter than the duration of the main wash cycle of a conventional dishwashing machine.

18. A shaped body as claimed in any of the preceding claims, characterized in that one of the bleaching components or the bleaching component, more particularly the chlorine component, is not made up in  
25 one phase with the perfume component.

19. A shaped body as claimed in any of the preceding claims, characterized in that the silver protector is not made up with (any of) the bleaching component(s).

20. A shaped body as claimed in any of the preceding claims, characterized in that one of the components, or the component, for  
30 controlling solubility is made up together with the bleach activator.

21. A shaped body as claimed in any of the preceding claims, characterized in that one of the components, or the component, for controlling solubility is made up together with the enzymes.

22. A shaped body as claimed in any of the preceding claims,  
5 characterized in that one of the components, or the component, for controlling solubility is made up together with the bleaching agent.

23. A shaped body as claimed in any of the preceding claims, characterized in that one of the components, or the component, for controlling solubility is made up together with the silver protector  
10 component.

24. A shaped body as claimed in any of the preceding claims, characterized in that one of the components, or the component, for controlling solubility is made up together with at least 50% by weight, preferably with more than 70% by weight and, more preferably, with more  
15 than 90% by weight of a surfactant or the mixture of surfactants as a whole.

THIS PAGE BLANK (USPTO)